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11. An apparatus for handling a pair of sheet metal workpieces to be welded, comprising:

a first workpiece holder;

a second workpiece holder;

wherein the first and second workpiece holders are positioned so that an edge of one of the pair of sheet metal workpieces is in contact with, or separated a gap from, an edge of the other sheetmetal workpieces;

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a backing element disposed on a first side of the sheet metal workpieces; and

a squeeze roller, disposed on a second side of the sheetmetal workpieces opposite the first side and substantially aligned with the backing element, wherein the squeeze roller is formed as a body symmetrical in rotation, and wherein force selectively applied to the squeeze roller will cause plastic deformation of one of the pair of sheet metal workpieces and thereby cause the deformed sheet metal workpiece to extend into the gap.

12. The apparatus of claim 11, wherein the squeeze roller is spherically shaped.

13. The apparatus of claim 12, wherein the squeeze roller is mounted on a support to permit rotation in any direction.

14. The apparatus of claim 13, wherein the support forms an acute angle with a plane formed by the sheetmetal workpieces .

15. The apparatus of claim 14, further comprising a workpiece brake that can be selectively actuated into contact with one of the sheetmetal workpieces and thereby cause the contacted sheetmetal workpiece to be clamped between the backing element and the workpiece brake.

16. The apparatus of claim 15, wherein the workpiece brake is disposed at an acute angle relative to the contacted sheet metal workpiece.

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17. The apparatus of claim 16, further comprising:

a gap sensing device for sensing the width of the gap adjacent the squeeze roller;

a controller for controlling the amount of force applied to the squeeze roller as a function of the gap adjacent the squeeze roller, thereby controlling the gap between the sheetmetal workpieces.

18. The apparatus of claim 17, further comprising a gap position sensor for determining the position of the gap after deformation, and a welding machine guide operably connected to the gap position sensor, wherein the welding machine guide guides the welding machine relative to the gap using input from the gap position sensor.

19. The apparatus of claim 13, further comprising a workpiece brake that can be selectively actuated into contact with one of the sheetmetal workpieces and thereby cause the contacted sheetmetal workpiece to be clamped between the backing element and the workpiece brake.

20. The apparatus of claim 19, wherein the workpiece brake is disposed at an acute angle relative to the contacted sheet metal workpiece.

21. The apparatus of claim 13, further comprising:

a gap sensing device for sensing the width of the gap adjacent the squeeze roller;

a controller for controlling the amount of force applied to the squeeze roller as a function of the gap adjacent the squeeze roller, thereby controlling the gap between the sheetmetal workpieces.

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22. The apparatus of claim 13, further comprising a gap position sensor for determining the position of the gap after deformation, and a welding machine guide operably connected to the gap position sensor, wherein the welding machine guide guides the welding machine relative to the gap using input from the gap position sensor.

23. The apparatus of claim 11, further comprising a workpiece brake that can be selectively actuated into contact with one of the sheetmetal workpieces and thereby cause the contacted sheetmetal workpiece to be clamped between the backing element and the workpiece brake.

24. The apparatus of claim 23, wherein the workpiece brake is disposed at an acute angle relative to the contacted sheet metal workpiece.

25. The apparatus of claim 11, further comprising:

a gap sensing device for sensing the width of the gap adjacent the squeeze roller;

a controller for controlling the amount of force applied to the squeeze roller as a function of the gap adjacent the squeeze roller, thereby controlling the gap between the sheetmetal workpieces.

26. The apparatus of claim 11, further comprising a gap position sensor for determining the position of the gap after deformation, and a welding machine guide operably connected to the gap position sensor, wherein the welding machine guide guides the welding machine relative to the gap using input from the gap position sensor.

27. An apparatus for handling a pair of sheet metal workpieces to be welded, comprising:

a first workpiece holder;

a second workpiece holder;

wherein the first and second workpiece holders are positioned so that an edge of one of the pair of sheet metal workpieces is in contact with, or separated a gap from, an edge of the other sheetmetal workpieces; and

means for plastically deforming one of the sheet metal workpieces, wherein said means for plastically deforming one of the sheetmetal workpieces can be selectively applied to cause that sheet metal workpiece to extend into the gap.

28. The apparatus of claim 27, wherein the means for plastically deforming one of the sheet metal workpieces comprises:

a backing element disposed on a first side of the sheet metal workpieces; and

a squeeze roller, disposed on a second side of the sheetmetal workpieces opposite the first side and substantially aligned with the backing element, wherein the squeeze roller is formed as a body symmetrical in rotation, and wherein force selectively applied to the squeeze roller will cause plastic deformation of one of the pair of sheet metal workpieces and thereby cause the deformed sheet metal workpiece to extend into the gap.

29. The apparatus of claim 28, wherein the squeeze roller is spherically shaped and is mounted on a support to permit rotation in any direction.

30. The apparatus of claim 28, further comprising a workpiece brake that can be selectively actuated into contact with one of the sheetmetal workpieces and thereby cause the contacted sheetmetal workpiece to be clamped between the backing element and the workpiece brake.

31. The apparatus of claim 28, further comprising:

a gap sensing device for sensing the width of the gap adjacent the squeeze roller;

a controller for controlling the amount of force applied to the squeeze roller as a function of the gap adjacent the squeeze roller, thereby controlling the gap between the sheetmetal workpieces.

32. The apparatus of claim 28, further comprising a gap position sensor for determining the position of the gap after deformation, and a welding machine guide operably connected to the gap position sensor, wherein the welding machine guide guides the welding machine relative to the gap using input from the gap position sensor.

33. An apparatus for handling a pair of sheet metal workpieces to be welded, comprising:

a first workpiece holder;

a second workpiece holder;

wherein the first and second workpiece holders are positioned so that an edge of one of the pair of sheet metal workpieces is in contact with, or separated a gap from, an edge of the other sheetmetal workpieces;

a pair of backing elements disposed on a first side of the sheet metal workpieces; and

a pair of squeeze rollers, disposed on a second side of the sheetmetal workpieces opposite the first side and substantially aligned with the backing elements, wherein the squeeze rollers are formed as a body symmetrical in rotation, and wherein force selectively applied to the squeeze rollers will cause plastic deformation in the pair of sheet metal workpieces and thereby cause the sheet metal workpieces to extend into the gap.

34. The apparatus of claim 33, wherein the squeeze rollers are spherically shaped.

35. The apparatus of claim 34, wherein each of the squeeze rollers is mounted on a support to permit rotation in any direction.